LESSON 1 EXPLORER IN ACTION

Life skills

1 Read and answer

In your opinion, what are the most important skills for an engineer? In your opinion, what are the most important skills for an archaeologist?

- Project management, knowing the appropriate building places.
- Knowing where to dig, being able to search and dig.

Graphic organizer

2 Read and complete

Which tools help archaeologists locate things above the ground? Which tools help archaeologists locate things below the ground?

GPS   ground penetrating radar   magnetometer

GPS

locate things above the ground

ARCHAEOLOGISTS' TOOLS

locate things under the ground

Magnetometer

Ground penetrating radar

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Critical thinking

3 Think and answer

Read the scenarios below. Decide which tools from Exercise 2 could be used for each scenario.

1. You want to see if there are any old coins buried underground.

Magnetometer

2. You receive a message from a friend who is lost and you want to try to find them.

GPS

3. You want to find out if there are any old buildings under the ground.

Ground penetrating radar

4 Discuss in pairs

1. Mr. Lin uses his engineering experiences in his archaeological work. Think of other subjects or backgrounds which might be useful for an archaeologist. **Data collection and analysis, use of modern technologies**

2. Technology has become very advanced in the last fifty years. Think about the next fifty years. What changes do you think we will see in technology? How might they help archaeologists?

It evolved faster than last period.

5 Think and answer

Imagine you are planning an archaeological expedition to find the remains of a city buried in the desert. Write a short paragraph to explain what technology you will use for your expedition and how you will use it.

For our archaeological expedition, we will need to use …

- **Collecting images from satellites**
- **Data collection and analysis**
- **Identify and study the right location (GPS)**
- **Use appropriate technological tools for research (Ground penetrating radar)**
- **Use appropriate technological tools for drilling**

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Learn by doing **LESSON 2** The evolution of technology

Comprehension

1 Look and match

Complete the table with the information from each box.

| The Electronic Age | The Electro-Mechanical Age |
| The Mechanical Age | The Pre-Mechanical Age |

a. printing machine, calculator, typewriter

b. satellite, smartphone, online maps, word processor

c. pens, pencils, parchment, paper, abacus

d. telephone, telephone lines, record player

Dates	Ages of technology	Inventions
3000 BCE-1450 CE	The Pre-Mechanical Age	C
1450-1840	The mechanical age	A
1840-1940	The electro-mechanical age	D
1940-present	The electronical age	b

Graphic organizer

2 Think and write

Think about how technology develops. Look at Exercise 1 again. Complete the timelines showing how technology has developed

pencils   typewriting   Printing machine   word processor

abacus   calculator   computer

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Issues and challenges

3 Practice and write

Let's measure our speed at typing and writing. Work with a partner and practice typing and writing. Measure your speed each time.

Type/write this sentence:

Eat healthily, live happily, respect all and be yourself.

	Attempt 1	Attempt 2	Attempt 3
writing on paper			
typing on a cell phone (if available)			
typing on a computer keyboard			

practical question Students have to perform it to measure their writing speed in different situations

Critical thinking

4 Think and answer

Read the scenarios. What method of communication would you choose in each situation? Write your answer and explain why.

1. Your friend asks you if you can meet tomorrow. You need to send him/her a short reply to say yes.

_____ **SMS** _____

2. Your grandmother lives in a different city. You want to tell her about what you learned in school and what you want to do when you visit her.

_____ **An e-mail** _____

3. You want to send a short message to your cousin to say happy birthday.

Social media like face book

ICT and me

5 Read and answer the questions

1. What kinds of technology do you use at home? How do you use them?

Laptop – tablet to study or search and playing games

2. What kinds of technology do you want to use in the future?

Micro bit –Robots – different applications

Learn by doing

LESSON 3 Components of computer systems

Comprehension

1 Look and write

Label the computer and its components with the words in the box.

keyboard	mouse	printer
scanner	screen	speaker

Printer

Speaker

Scanner

Screen

Keyboard
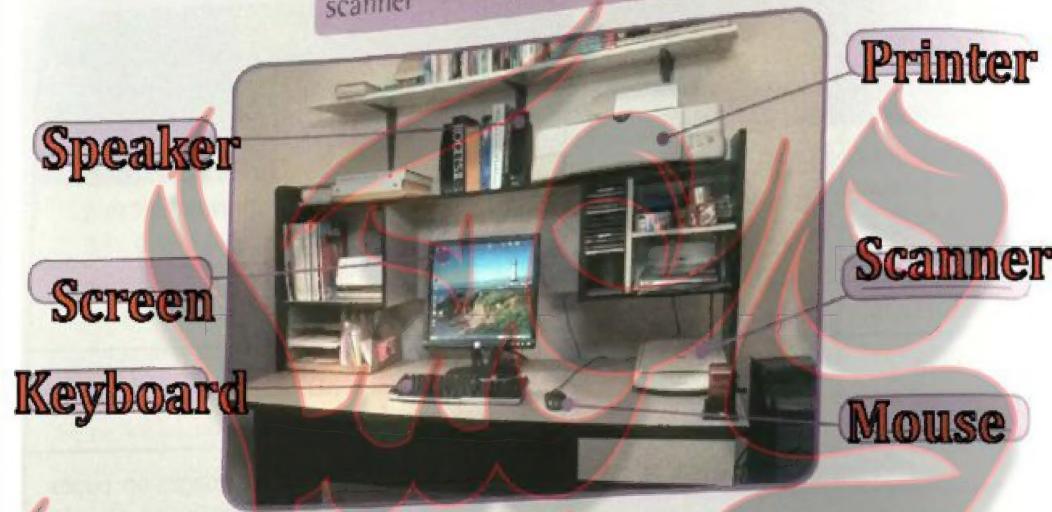
Mouse

2 Think and write

What is the function of each component of the computer above? Complete the chart.

Functions	Components
Allows interaction with, and selection of, information	Mouse
Displays visual data: texts, images, and videos	Screen
Allows input of images	Camera
Allows input of text	Keyboard
Allows input of text and images from paper	Scanner
Allows output of text and images on paper	Printer
Allows input of audio	Microphone
Allows output of audio	Speaker

Issues and challenges

3 Look and write

Devices can also include components to help people of determination. Read the descriptions below and write the name of the component. Then answer the question.

1. This component allows blind people to use computers.

Braille terminal

2. This component allows non-verbal people to speak.

speech synthesizer

4 Think and write

What other computer components might be helpful for people of determination? How can they help?

Braille terminal

ICT and me

5 Think and answer

Read the questions below and think about your family, your home and your school. Discuss your answers with a partner and then write.

1. Do your family and friends use computers? What do they use them for?

teacher **Preparing lessons, and making electronic exams**

2. When might you use the following components on a device?

Camera: **Photographing events and communicating with others**

Microphone: **Recording audio and communicating with others**

Speaker: **Hearing audio clips**

3. Which component do you think is more useful: a printer or a scanner? Why?

Printer **Because it is possible to replace the scanner with the camera**

4. Lots of modern electronic devices have very small computers or computer components in them! For example, many new cars have computer components which can tell the driver if there is a problem with the engine. Can you think of some other devices which aren't computers but use computer components?

**Smart Screens & Refrigerators & Washing Machines**

ICT and me

3 Think and draw

You are playing a game on your computer. Draw and label the relationship between you, the game application, the operating system, and the CPU.
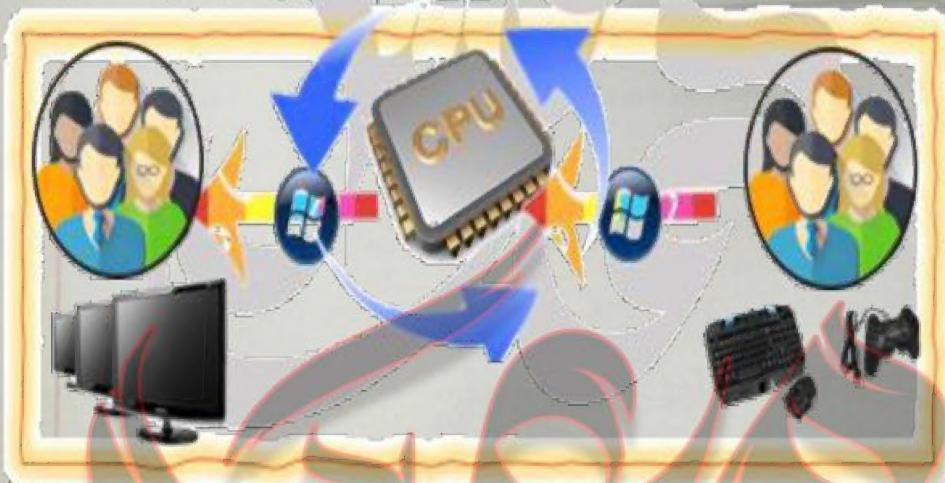
4 Think and answer

Imagine you are transported back in time to before computers (PCs, laptops) were invented! How would you explain to them the importance of a computer, how this technology spread and how it works?

Find a way to communicate with friends and family Instead of waiting long times to gather Facilitates constant communication

Imagine a person holding a book-like device with a color screen and a set of buttons It can play animations and make sounds

Find a way to communicate with friends and family Instead of waiting long times to gather Facilitates constant communication

Learn by doing
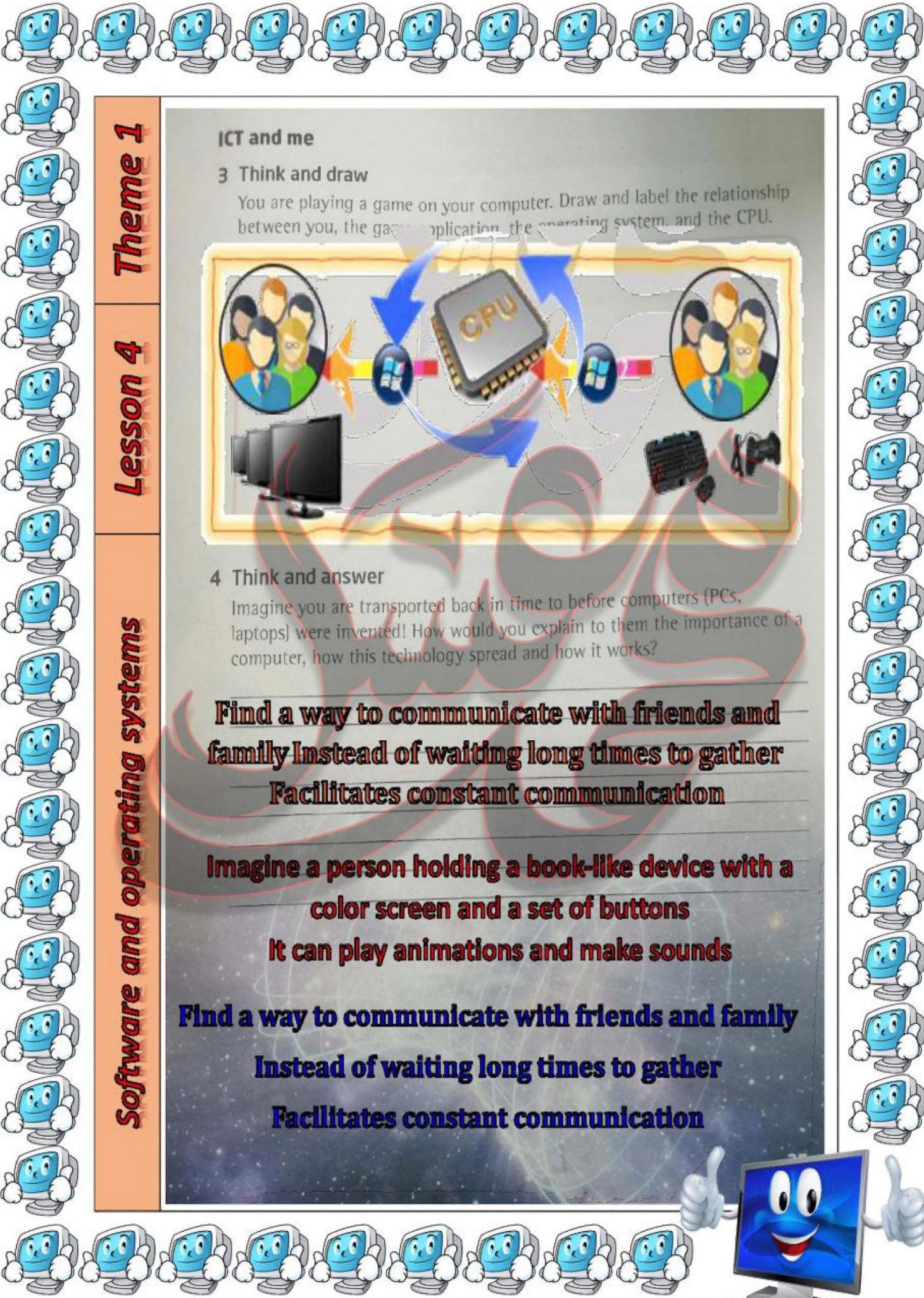
LESSON 4 Software and operating systems

Comprehension

1 Look and complete

Write the words from the box in the correct column.

| CPU | gaming apps | Google Chrome™ browser | keyboard |
| PowerPoint® | Microsoft Word® | screen | Windows® |

Hardware	Operating systems	Application software
Screen	**Windows**	**Gaming apps**
CPU		**Google chrome**
Keyboard		**Power point**
		Microsoft word

2 Read and match

Read the steps and match them to the images. Write the letter.
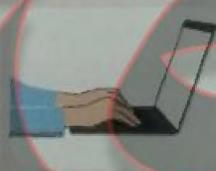
a   b   c   d

1. You open the program and start typing.   **c**

2. The program receives the data and tells the operating system. The operating system interprets the data.   **a**

3. The Central Processing Unit receives the data from the operating system. It processes the data and sends it back to the operating system.   **d**

4. After the operating system sends the information to the program, the program puts the information on the screen.   **b**